

approach

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Bad luck has wings



BAD luck is at your 12 o'clock position, level and holding. Wait a minute. OK, now it's moved a little higher and is no longer a factor, but someday, bad luck could smash right through your windshield.

Bad luck often comes with wings, red guts, yellow claws, and a poor sense of direction.

Many fliers think birdstrikes happen only during the spring and fall, but no one's ever informed a bird of that gorgeously simple reduction.

Birds don't hibernate during the "off" season. Sparrows, for example, don't burrow into the dirt. Instead, they file VFR for a little farm work in the local area while waiting for their next cross-country approval.

Try and stop them (but not with your airframe)!

We get birdstrike reports every month of the year. In the story on page 28 by Russ Forbush, a low-level hawkstrike actually blinded a Marine F-4 pilot temporarily. The RIO had to give stick and rudder calls from the back cockpit.

In response to a startling 153 Navy or Marine Corps birdstrikes thus far in CY-82, COMNAV-AIRPAC has directed its aircraft to use strobe, landing, or taxi lights when flying below 2,000 feet where operationally possible. (For TACAIR, this procedure pertains only to takeoff, landing, and approach operations and is in force until further notice.) According to the AIRPAC message, *aircraft using strobe lights can significantly reduce birdstrike hazards.*

The buzzard in this picture is now history, and he's earned his place the hard way. His friends want revenge, so keep your eyes open, your visor down, and don't let bad luck get in your way. It's up there, just waiting to swoop into your future!

— LT Colin W. Sargent

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With the Cat 1 and 2 observation bubble in the foreground, AJ 601 of the VAW-124 Bear Aces awaits preflight for an alert launch aboard the USS CARL VINSON (CVN 70). Photo by PH3 Todd W. McClaskey, shot coordinated by LTJG William T. Klein.

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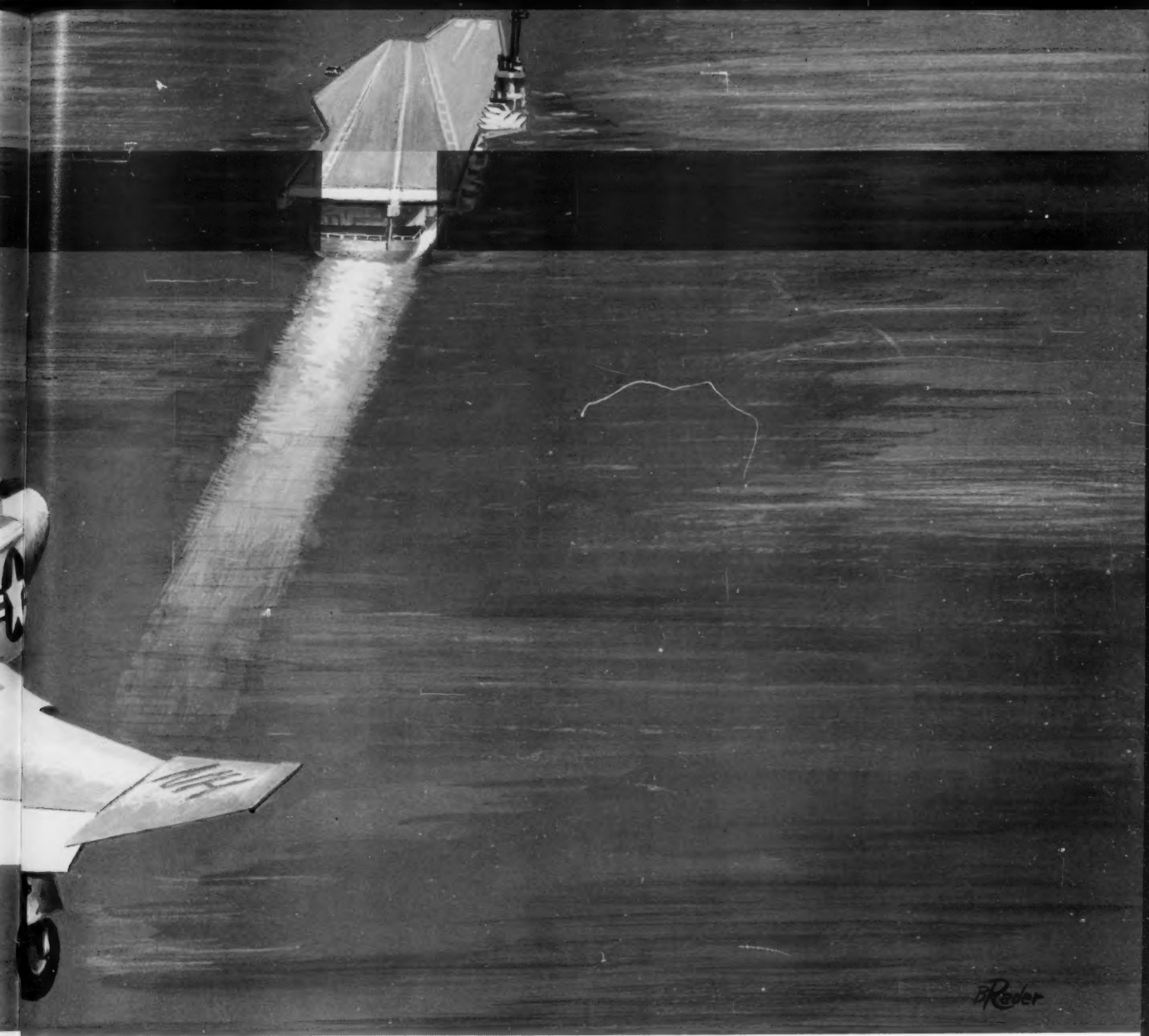
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THE WAVEOFF

*“Wave off! Wave off!” screams a panicky LSO.
The aircraft engines respond and the pilot maintains
the landing attitude.
A landing mishap is narrowly avoided.*

approach/august 1982



WINDOW *A forgotten concept?*

By LCDR F. A. Roberts
COMNAVAIRLANT LSO

UNFORTUNATELY, over the last decade, this has all too often not been the case. LSO error has contributed to an increasing number of carrier landing mishaps. And one of the most frequently recurring themes in LSO-related mishaps is "failure to initiate a timely waveoff."

LSO NATOPS charges the landing signal officer with

responsibility for safe and expeditious recovery of aircraft aboard ship. The LSO has many means available to enable him to fulfill these important responsibilities, not the least of which is the waveoff. Over the years, much has been written concerning waveoffs. Generally, the focus has been directed toward proper techniques for executing waveoffs and how to

use those techniques in relation to aircraft nearing touchdown (i.e., the "in-close" waveoff scenario). I'm not writing this to regenerate discussion of the validity of the "in-close" waveoff principle but, rather, to examine possible reasons for the increase in LSO failure to initiate timely waveoffs.

Waveoffs fall into two categories — first, those waveoffs made necessary by poor pilot technique and, second, those waveoffs made necessary because the deck is foul. Though this distinction is a matter of intuition to most carrier aviators, I'm mentioning it merely as a baseline for subsequent amplification in addressing waveoff concepts. For the purposes of discussion, we'll consider waveoffs because of poor pilot technique in which the deck is also foul as technique waveoffs.

The dual-pronged concept of "safe and expeditious recovery of aircraft" is not necessarily a mutually-supportive principle. Safe recovery of aircraft is an easily definable and achievable goal for the LSO. However, strict application of this principle has the potential of producing rather conservative waving strategies and reduced boarding rates. Expeditious recovery of aircraft as a single waving principle could produce a greater incidence of carrier landing mishaps. The problem, then, for the LSO, is adopting a waving strategy that allows safety to override expediency of aircraft recovery. This is a

difficult problem but one that can be solved by a waving strategy that uses preestablished waveoff criteria, or a "waveoff window."

The waveoff window concept is not a new one, but perhaps over the years it has become a forgotten one. The frequency of late, LSO-initiated waveoffs resulting in landing mishaps is disturbing and indicates the concept needs reemphasis in the LSO community. The waveoff window is simple in design and provides the LSO with a tool he can use consistently in determining where and when a waveoff is required.

The window, of course, is influenced by many variables. They can be loosely categorized as aircraft, ship, environmental, pilot, and LSO factors.

All of these variables interact to either expand or shrink the lateral and vertical components of the waveoff window as well as move the horizontal dimension closer to or farther away from the landing area. A number of these factors are relatively fixed; that is, they don't change appreciably from the time the approach commences at the ball call until landing, bolter, or waveoff.

These fixed factors define the inner limits of the waveoff window. They must be correlated by the LSO so that he can picture in his own mind where that inner limit is in spatial relationship to his position on the LSO platform. The factors

Aircraft Factors

- *Type aircraft
- Glide slope and rate of descent
- Lineup and drift rate
- Airspeed, acceleration, and deceleration
- Power setting
- Attitude
- *Emergency configurations
- *Fuel state

Ship Factors

- Hook-to-ramp clearance
- *Trim
- Deck movement
- *Divert availability
- *Tanker availability
- *Use of MOVLAS
- *Recovery equipment operability
- *EMCON
- *Men or obstructions in landing area

Environmental Factors

- *Relative headwind
- *Crosswind component
- *Ceiling
- *Visibility

Pilot Factors

- *Experience
- *Proficiency
- *Fatigue
- *Vertigo
- *Reaction time

LSO Factors

- *Experience level
- *Fatigue
- *Reaction time
- External pressure (real or perceived)

- *Fixed or relatively fixed factors





define that position in space beyond which an aircraft should not continue an approach if the deck is foul. That position is where the expediency of aircraft recovery is **overcome** by the requirement for safe aircraft recovery. *This window is not a decision point for the LSO; it is a defined point that mandates a waveoff — not a decision.*

The remaining factors are variables in the waveoff window concept and define the airspace vertically, laterally, and horizontally aft of the inner limit. They define the safe waveoff window as that position in space beyond which an aircraft should not continue an approach because reasonable doubt exists that a safe landing can later be made. This outer window, of course, is dynamic in nature. It constantly expands and shrinks and moves out and in (but never closer than the fixed inner limit) as the variables change during the course of an approach. Once again, this window defines a waveoff criterion — not a decision point.

The personal waving technique I've employed correlates the fixed factors to define the inner limit of the waveoff window as a position that permits an aircraft waving off to come no closer than 10 feet above the deck. (This criterion has recently been submitted to CNO as a change to LSO NATOPS.)

To define the safe waveoff window, I've used some clear-cut rules of thumb. The variable ship factors of hook-to-ramp clearance and deck movement actually translate easily into aircraft variables. Thus, my attention focuses entirely on the five variable aircraft factors or approach dynamics. So long as at least four of those five factors have been under control, I've continued to wave the aircraft. But when two (or more) of those factors have exceeded acceptable parameters, I've considered my window broken and initiated a waveoff.

Continued



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As a final note, my personal waving strategy doesn't actively consider the variable factor of real or perceived external pressure. That's not to say I've disregarded it but merely that *I did not consciously allow pressure to get an aircraft aboard to alter my standards or definition of the waveoff window.* (It's worked for me in 8 years of waving, since I've never been involved in an LSO-related carrier landing mishap as a controlling, backup, or supervisory LSO.)

The key to the waveoff window is individual LSO predefinition of a set of "rules" for himself which places him in an anticipatory rather than a reactionary position while controlling aircraft. It gives him a set of criteria to use which, when exceeded, force the initiation of a waveoff. They reduce his instantaneous decisionmaking requirements.

Some may argue that this concept is too mechanical. Perhaps it is. As a corollary, however, our instructional methods in teaching pilots the rudiments of landing aboard a ship are also mechanical. With continued exposure to controlling the approach dynamics, pilots develop their mechanical skills to the point where control of those dynamics becomes more anticipatory than reactive. By far, the most consistently safe carrier aviators are those who have developed their own approach dynamic criteria and anticipate actions required to control those dynamics rather than react merely to deviations.

The same is true for LSOs. The best LSOs are those, like pilots, who have, through continued exposure and training, translated the mechanics of waving into nearly intuitive skills. Application of the waveoff window concept is a step in that direction. Sufficient training in use of the waveoff window can virtually eliminate the possibility of an LSO contributing to or causing a carrier landing mishap by failing to initiate a timely waveoff.

Under the waveoff window concept, there are four distinct circumstances that can lead to an untimely waveoff by the LSO:

- Incorrectly assessing fixed factors and therefore creating a waveoff window with an inner limit too close to the point of

landing.

- Incorrectly assessing variable factors so that waveoff criteria results in a window too expansive or too close to the inner limit.

- Letting external pressure (real or perceived) move the inner limit of the waveoff window too close to the point of landing merely for the sake of expediency ("The deck will go green in just a second.").

- Letting external pressure (real or perceived) expand the variable waveoff window criteria merely for the sake of expediency ("No approach is so bad that it can't be salvaged.").

For the LSO to fulfill his responsibility for the safe and expeditious recovery of aircraft requires training, judgment, and comprehension of the various factors germane to the waveoff situation. The waveoff window provides an index for that understanding. LSO exposure to dynamic waving situations provides the required training in application of that concept and the necessary experience to improve judgment in defining the limits of the waveoff window.

The waveoff window is a valid management tool, and with sufficient training, the LSO can effectively use the window to ensure the safe recovery of aircraft. Some might argue that it sacrifices expediency, and perhaps it does, but it doesn't trade off safety to achieve expediency. As the LSO increases his ability to more accurately define the waveoff window and his skill at using that window develops, he'll achieve expediency the *safe* way.

The frequency of untimely waveoffs by LSOs as a major contributor to carrier landing mishaps leads me to one of two conclusions — first, LSO understanding and training in this area is lacking, or second, pressure for expeditious recovery of aircraft has supplanted safe recovery of aircraft as the LSO's primary responsibility. *In terms of efficient carrier operations, safety is an absolute, expediency is only relative.* Application of and training in the waveoff window concept is a positive step in reducing if not eliminating carrier landing mishaps as a result of late waveoffs. Fly the ball . . .



CANOPY
CANOPY
CANOPY

UNINTENTIONAL CANOPY JETTISON

By CDR H. W. Hewlett
NARF, NAS Norfolk

THE most memorable feature of a canopy loss incident is that there's no warning — NO WARNING! Just, puff . . . and it's little old you against the elements.

I feel qualified enough to talk about this, since I've lost a canopy twice within the last few weeks. Weather conditions were about as ideal as anyone could expect in the open air, first at 33,000 feet and later at 41,000 feet. Both flights were normal functional check flights, following KA-6D SDLM in the first case and long term storage of an EA-6A at MASDC in episode No. 2.

Fortunately for us, we had our masks on and visors down, autopilot in stab aug only, and were prepared for emergencies, as anyone would be on a functional check flight. The A-6 canopy jettison system gives no indication of moisture creeping into the "dry nitrogen" or impending freezeup in the 2,450 psi-charged valves (the suspected but not proven cause both times). Once enough N₂ leaks past the jettison valve to initiate the firing pin in the jettison cartridge, neither you nor Mother Nature can stop it from firing.

The initial reaction was "What the hell happened?" Of course, the second time, there was no doubt in my God-fearing mind. Once the realization set in, the next task was to *get down fast*. But how fast can you go with the breeze blowing on you? I was never prepared for that one. Actually, at 300 KIAS, the wind blast was extremely noisy but the cockpit was enveloped in a low-eddy air pocket. We decided about the same time to safe our face curtains, even though I was apprehensive about the wind blast catching my arm. In fact, even at face-curtain level I was surprised to find very little wind. That sort of blew holes in the theory of unintentional ejection (of course, we left the lower handle armed).

Once we got over the discomfort of wondering if the seats were next to go, the task of a normal field recovery was rather routine. One exception was that the radios and ICS could not be heard over the wind noise until the aircraft was slowed to approach speed. All of the communication was one-way, from the aircraft to ground stations.

That leads to the "what ifs." What if we'd been IFR? How would we have received vectors and altitude clearances? In order to hear radio transmissions in that environment, you have to slow down, but that's somewhat inconsistent with a rapid descent to avoid oxygen pressure breathing and long-term exposure to severe cold.

My experience also demonstrated that the VDI picture tube can't take the decompression and fails, so your primary attitude instrument is *gone*. If you're over unfamiliar terrain, without knowledge of local NAVAIDS, you could easily become lost, because any charts or pubs not wedged in leave the

cockpit in the decompression blast. (In contrast, I was rather surprised that neither my helmet bag nor the PCL was sucked out, even though they weren't tied down.)

What if we hadn't been on oxygen? I've always believed the physiologists when they've warned of a rather short useful-consciousness time. Actually, I did experience positive-pressure breathing (for real) until below 30,000 feet.

Here's another one of the "what ifs" — what if I'd been leaning on the canopy rail with my elbow or had my seat set higher than the canopy bow? My experience is that the canopy blows off so fast that only peripheral vision may have picked it up on the second incident. Finally, what if fuel or hydraulic structures had been damaged on the turtle back or vertical stabilizer? You're never really sure! At least it was the first time I've been able to look back and see the vertical stab in flight! (At night, you probably couldn't even see that.)

My biggest fear for anyone this might happen to is that he will overreact, or worse, become disoriented in the deteriorated weather conditions because he can't hear anyone and his instruments have become unreliable.

What can be done to prevent this incident? For the aircrews, nothing, except be prepared! For the maintenance technicians who service the system, please strictly adhere to the use of "dry nitrogen" only.

What you're dealing with is a system consisting of a stored-gas nitrogen bottle (about the size of a *Star Wars* lunchbox thermos bottle) with filler valves, check valves, and relief valves that maintain a constant pressure of 2,450 psi on the input side of three release valves (each about the size of a draftsman's gum eraser), all plumbed together by high-pressure tubing laced around the cockpit and boarding ladders.

If a canopy jettison is required, a "D-handle" is pulled, displacing the valve stem in one of the release valves, allowing pressurized nitrogen to actuate a percussion-fired primer in the canopy jettison cartridge. A vent bleeder check valve, downstream of the release valves, vents any low-pressure nitrogen that may have leaked past the relief valves. If *any* of the three release valves is actuated, the bleeder valve stops venting when the pressure flow rises above 40 to 60 psi.

Documented inadvertent jettisons have occurred at altitudes above 30,000 feet. When an aircraft reaches a high altitude, moisture, which may be present around the release valves, can freeze and expand, unseating the valve and allowing pressurized nitrogen to flow through and fire the canopy jettison system. It doesn't take much moisture to lift that small valve seat, so while we're working on a long-term solution, remember, an unintentional canopy jettison may be just a puff away! ◀



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Who's on First? A night CV recovery was in progress. Based on the landing schedule passed by CATCC, the arresting gear and lens were "expecting" an EA-6B. The controlling and backup LSOs checked this setting on their monitor. As the *Prowler* approached the ship, however, the tower spotter and air boss mistook it for an A-7 because the aircraft's pylon lights were inoperative. The arresting gear and lens setting were then changed to A-7 settings while the air boss attempted to verify the lineup and determine which frequency the aircraft was on. The air boss had switched frequencies and didn't hear the ball call. The changed lens setting didn't catch the eyes of the LSOs, and they weren't informed of the new weight setting.

Throughout the approach, the LSOs were expecting an EA-6B and received no indication that the tower personnel thought the aircraft was an A-7. The arresting gear officer also misidentified the aircraft and cleared the deck once the arresting gear was set and other clear deck parameters were met. As

the EA-6B approached the ramp, the air boss realized his mistake and directed the LSO, via the 5MC, to wave off the aircraft. The pilot correctly added full power but was unable to avoid landing. Fortunately, the aircraft and arresting gear weren't damaged.

This incident was triggered by the inoperative pylon lights on the EA-6B. Without pylon lights, an A-6 is hard to distinguish from an A-7 at night until the aircraft is in-close.

Because of this, the air boss, tower spotter, and arresting gear officer all incorrectly identified the aircraft. *When confusion existed concerning the aircraft model, the air boss delayed a decision to wave off the EA-6B.* In changing radio frequencies, the air boss failed to hear the ball call. At no time were the LSOs informed that the lens and weight setting had been changed.

It was fortunate that this incident didn't result in disaster. When a recovery team doesn't know "who's on first," trouble looms ahead. The CV and squadron involved in this incident have

taken the following action to ensure it doesn't occur in the future:

- The air officer will direct an early waveoff anytime there's a discrepancy between the landing schedule and model aircraft that is visually identified.

- The squadron briefed all aircrew and maintenance personnel on the importance of aircraft lighting configurations, with particular emphasis on the use of pylon lights for identifying A-6s.

Other CVs and A-6 squadrons who hope to work together would be wise to take a look at their SOP in this regard.

A Feathery Midair. LTJG Allan Smith, a VT-23 instructor pilot, and 2d Lt Doug Pyles launched at 1400 from NAS Kingsville on what they thought would be a routine familiarization flight in the local areas. Both were firm believers in the "big sky, little airplane" theory but soon found themselves sharing the same airspace with three feathered friends.

As the aircraft launched and climbed through 500 feet AGL, 2d Lt Pyles caught a glimpse of three large birds just before they hit the starboard engine intake. A loud "bang" preceded fluctuating EGT indications and an immediate spooling down of the No. 2 engine.

LTJG Smith quickly took control of the aircraft and had 2d Lt Pyles secure the starboard engine to prevent further damage. Beginning a single-engine climb to altitude, our trusty aviators were plagued with more problems — both generators fell off the line.

After numerous unsuccessful attempts to reset the port generator, 2d Lt Pyles placed the battery switch to EMERGENCY to regain UHF communications. LTJG Smith leveled off at 700 feet and performed a controllability

AIR BREAKS

check while 2d Lt Pyles recited the appropriate emergency procedures from the NATOPS pocket checklist.

Another airborne T-2 rendezvoused on the crippled *Buckeye* to check for external damage. With no apparent skin damage, the T-2 crew executed a straight-in, single-engine approach to home field. LTJG Smith then skillfully landed the aircraft to a full stop.

A postflight inspection revealed massive compressor failure to the No. 2 engine. Compressor blades and the remains of two feathered friends were strewn along the entire length of the intake.

The teamwork displayed by LTJG Smith and 2d Lt Pyles during a critical phase of flight (i.e., immediately after takeoff) was exemplary and possibly prevented the loss of a valuable naval aircraft.

Their knowledge of NATOPS procedures and their ability to apply them

in an emergency situation is highly commendable. For the student, 2d Lt Pyles, this incident was another valuable experience in his new aviation career, and for LTJG Smith, it's an example of a naval aviator at his best!

Brushing the Evergreens. The aircrew of a TA-4J was scheduled for a basic instrument sortie and first advanced strike flight. This would be the first TA-4J flight for the assigned student naval aviator (SNA). The instructor pilot (IP) was up front and the SNA was under the hood in the rear cockpit. Takeoff went without incident. The area work and approach to the GCA pattern were completed as briefed.

The final maneuver of the flight was to be a precision approach to a missed approach. The SNA intercepted final at 5.5 miles and maintained glide slope with minor deviations until

reaching the 1-mile position.

At this point, the TA-4 was slightly below glide slope and decelerating while rate of descent was increasing to 1,000 feet per minute. This prompted the GCA controller to transmit a below glide slope call that was quickly followed by a well-below glide slope call.

The IP got the message, took control of the aircraft, and initiated a missed approach. During this approach, the aircrew heard a light thump and suspected the aircraft had penetrated the treetops. The pilot requested and received a visual inspection from the tower, but no discrepancies were noted. An uneventful landing followed.

The postflight maintenance inspection proved indeed that the TA-4 had brushed the treetops. There was minor airframe damage, with pine needles lodged in various areas of the aircraft undercarriage. Maintenance personnel determined that the TA-4 had penetrated the trees to wing-line level, resulting in pine needles being ingested into the engine. Serious-to-fatal injuries and major-to-strike damage most probably would have resulted with any further altitude loss.

This incident brought forth the following comments from the CO of this squadron: "How far an instructor can let a student go is a point of discussion in every training scenario. The *instructor-take-control point* varies with individual proficiency as well as aircraft/student performance. In listening to the tower tapes of this incident, it becomes very apparent that this situation deteriorated rapidly. Very minor deviations to glide slope were followed by a rapid deceleration, and the bottom dropped out. These two aviators were within 1 foot of a double fatality. Being below glide slope with a decelerating aircraft often spells DEAD."



approach/august 1982

DUKE

and

Newguy

By LCDR Marty Fox
HS-5



10

FINALLY. A day hop. After a solid week of being on the night cycle, I can stop worrying about my flashlight batteries. Moon must be turning full. Skeds officer says it should be a nice, quiet 3-hour ride with Nicky Newguy and no one wants to fly with me, even when there's a full moon.

"Break him in to our style," XO says during lunch.

"Sure, XO. Are you done with the peanut butter? Do I have to let him touch anything?"

Kid did okay in the RAG. Didn't break anything, anyway. I know that he'll ask a bunch of questions about noise abatement and course rules.

"This here's the Fleet, boy. We're supposed to make noise. The only rule is to find the ship without screwing up the pattern. Ya gotta be ready to pop across the fantail, gear down, at the same time you roger the winds from the boss. Look sharp, be sharp, and back me up. Don't move real fast in the cockpit, boy. Makes me nervous."

We're supposed to "hit" some small boys and then make a quick trip into NAS Beach for a parts drop. Not bad. Get a little fun flying today. Nothing like a little show of stick and rudder getting aboard a small deck to amuse and amaze Newguy. If he stays real quiet and doesn't annoy me, I'll think about giving him the landing ashore.

Well, we finally get off the deck after the kid announces that the takeoff winds given by the boss are "in limits" according to his pocket checklist.

"That's why he's the boss, kid," I say while rotating. I am a little impressed that he paid attention to the charts even though I didn't say anything. I was busy watching the LSE's dance and contemplating the results of an impact of a main rotor blade moving at more than half the speed of sound with an A-7. He even remembered the lights and overspeed override switches. Not bad. I didn't remember all of that until sometime last Thursday.

We take a few turns around "the starboard side of the ship," just to see if the old *Sea King* wants to fly today. I point out to Newguy that I like to do that because it gives



the crew a chance to do a good posttakeoff security check and for me to get the "feel" of the helo.

"Your insurance company wrote and asked me to be sure this thing will fly before going too far from 'Mother'."

He smiled and said, "Yes, sir."

I've got him now. He knows that I am an OK kinda guy and a true Helo Hero.

I figure that I've a few minutes on the way to one of the destroyers to teach him some small deck stuff.

"Hey, Ned — tell me what you know about this small deck stuff."

"My name is Nicky, sir."

"So what!" I almost gave him the controls, too.

"Y-yes, sir. All I know is that the aviation-capable ships are listed by their name and hull number in one of the publications. It gives their capabilities and certification level also.

"By the way, sir, should I pull back the power for cruise?"

"Oh, yeah. OK, move them real slow, so I can watch you."

I was busy trying to talk to Tower, find the small boy, and convince Air Ops that I was airborne on the other radio.

"What else do you know, and what are you doing now?"

"Just turning my checklist to the before-landing section and updating our position on the tactical navigation computer, sir."

"Oh!"

"The maximum pitch and roll numbers for us to land on this class of ship are 4 and 4. Due to the dynamic characteristics of the aircraft, pitch and roll values much larger than 5 would be most uncomfortable and hazardous for a landing on any deck. We need to remind the small boy to keep her speed up and hold her course after we land to avoid wallowing in these seas and to maintain the winds off our nose so that we may disengage or depart quickly in an emergency. Also, sir, we have to be watchful of the flight deck crew in their attachment of the tiedown chains. They need to put them on and break them down as quickly and simultaneously as possible. With less than the required chains attached, we may not be able to stay on deck, and we sure can't fly! Dynamic rollover is a real possibility if we try to leave with one side chained down. Right, sir?"

I just stare at him with slightly glazed eyes. Visions of close calls flash through my mind. Being trapped on deck while a ship slowed, turned, and wallowed always brought a repeat performance from my last *Coke* and candy bar as I watched the tiedown chain tighten to the point where it hummed. Having a ship take an unexpectedly large roll when your tail-wheel was free before the mainmounts were broken down would make a designated super hero wish he were a bank teller.

"Yeah, that's right." It took me a year to learn all of that. His coffee cup wasn't even here yet.

"It'll be a right-seat approach. Know why, Ned?"

"Because that's your seat, sir?"

Good point. He didn't correct me about his name, either. Maybe I'll let him write up some gripes when we get home.

"No, that's not the reason. Our cargo door is on the starboard side and we like to have one of the crewmen position himself there with the door open during approach to the ship. He gives us info concerning our tailwheel over the deck and mainmounts in the circle. Sure, we watch the LSE on deck, but it never hurts to have another opinion in the headset."

"Did my insurance company write that, too, sir?"

"No, mine did." Not bad, maybe he has some saving social graces.

"After you set your brakes, sir, the landing checks will be complete. Are you going to take off with the wheel chocks in place?"

"Brakes are set. Yes, I want to lift from the chocks. We don't do either on a larger deck where we have room to roll. On these small decks, it helps prevent sliding and unintentional departures while looking through the box lunch for cookies."

"Good landing, sir. Shall I secure the ASE to prevent unwanted control inputs while on deck?"

"Yeah, go ahead and punch the bottom." Boy, was I busy on the way in here. Hard to watch the kid, all the instruments, the pitching deck, the kid, the LSE, and the kid on the way in. I don't remember the deck being this small or that hangar structure being this close.

"Here, kid, take the controls and hold us on deck. I have to readjust my seat." Hope that I can do it without surgery. Wish old "Cougar Breath," my usual driving partner, were here. He usually keeps track of all the gauges and stuff while I stay "outside."

"Hey, kid, why didn't you have your hands on the engine power selectors during the approach?"

"Well, sir, I had already set landing power and wanted to keep my hands near the jettison panel and dump switches."

"What?"

"Well, if we lose an engine on the way in, the other engine will go to maximum power automatically. I could get in the single-engine envelope fast by reducing our weight. What do you think, sir?"

"I think that you also get a few more horsepower from that engine if the speed selector is pushed to the stops. The loss of weight idea is a good one, but we have to be careful about inadvertent jettisons also."

"I think I can get rid of all the external stores and sonobuoys and maybe some fuel before we get wet, sir. Could lose 500 pounds real fast and get the speed selectors up."

"Cougar Breath" usually just belches to clear his head during final. This kid thinks!

"I'll think about it, Nick."

"Nice deck, sir. They take real good care of it."

"It does look good. Remember, they don't use paint on the markings. It's a coloring. Paint would make the deck very slick. Just like not having any nonskid. Believe it or not, some of our allies' ships do not have nonskid. Their LSEs use different signals, and there's always a chance for confusion caused by language problems. Gotta be real heads-up on those beauties."

"Is that why there are two of us in here, sir?"

"No, that's why there are four of us in here, Ned."

After our next successful visit to a Defender of Freedom, we head towards NAS Beach.

"We have about 60 miles until we reach Beach, sir. Do you think Mother will follow her PIM?"

"Get serious, boy. If we're real lucky, she won't be in EMCON A as we try to find our way home."

"Perhaps I should figure our fuel with a fudge factor for a short search at the end, sir."

Good thought. He does smell better than "Cougar."

"Weather is really starting to look grim, sir. Getting hard to stay clear of clouds and maintain a navigational . . . lock on Beach, sir."

"Leave me alone, I'm worrying."

"The automatic direction finder doesn't really agree with the last bearing and distance lock. Neither really agree with our tactical navigation computer plot. Trying to stay under these 300-foot bases doesn't help our navigation."

"Yeah, *real* glad that Beach's radar is down. Try the radio homer. How about the aeronautical chart? Give it a good, hard look for identifiable land masses and obstructions. I'm having trouble keeping this thing in the air, and I don't need to bury my head in a chart. Give me a hand."

"Yes, sir. I'm getting an intermittent radio navigation signal now and it shows us to be approximately 5 nm from Beach."

Why is the signal intermittent at 5 nm? Is it because the signal is sick or is it because there is something made of rock with trees on it in the way? "What does the aeronautical chart tell you, Nick?"

"Well, there is some stuff as high as 1,000 feet just east of the field."

All the little hairs are up on the back of my neck and my bladder just squeezed real hard.

"Sir, shouldn't we . . ."

"OK, Nicky, we're turning out to sea and climbing to get a rock-hard navigation lock and clear all sector obstructions. Then we're going to follow squadron rules and shoot an instrument approach into this unfamiliar field, even if they say they're having a beautiful day."

"Yes, sir. Was hoping you would say that."

"Even a Helo Hero doesn't get too many mistakes. I'm going to be busy now and so are you. Let's do it, Nicky."

After we broke out on course to a freshly wet but now sunny runway, I turned the aircraft over to Nicky. He shot a lovely approach to a spot and made a good landing. As we taxied to the terminal, the crew, who had been very quiet, started their normal chatter.

"Where have you toads been?"

"Just sitting here listening to you guys work, sir. We hate it when one pilot just goes along for the ride or one guy doesn't let the other guy talk or listen to him. Nice to listen to a team effort."

"Don't listen to them, Nick. They're just setting you up for a loan so that they can buy souvenirs for their children when we hit port."

IFR Suppl-a-what?

By LT J. D. Langford
VAQ-131

HOW many times do you hear that common question, "Did you check the NOTAMs, current pubs, and IFR Supplement?" And how many times do you answer "Yeah, no sweat!" Well, on a recent cross-country, our EA-6B crew relearned the importance of the Aerodrome Remarks section of the IFR Supplement.

After some delays for maintenance, we launched late in the afternoon on the first leg of a two-legged cross-country. The briefed weather looked good at both stops, so no alternates were needed.

Arriving at Southwest AFB, we were surprised to find our emergency blow-down bottles had bled down in flight. We inquired at the transient line about nitrogen servicing, and out of nowhere arrived a grizzled old nitrogen cart that probably saw action in the last big war. Quickly, we opted for Plan B and called the relatively unknown Navy detachment there. Sure enough . . . sailors to the rescue! With our trusty *Prowler* well again, we updated the weather for our final destination and headed for NAS Southeast.

While en route, we decided to get a weather check (as all good aviators do). As you might have guessed, NAS Southeast was now reporting sky partially obscured, 300 feet broken, three-quarters of a mile visibility in fog. Yipes, where did that come from? We inquired about Southeast AFB as an alternate, but the weather was worse there and no better at NAS Big City. It didn't matter anyway, because the fields were already closed (the time was now 2300 local).

Quickly, off to IFR Supplementville. Not only were most nearby alternates closed, but airfields up to 150 nm from our final destination were closed. Southwest Center also realized our plight and began assisting by calling various bases to ask if they'd remain open in case we were unable to land at our filed destination. Finally, our pilot remembered an ANG base next to where he was stationed during advanced jet training. A weather check proved good, and we were off the hook.

Descent and landing at NAS Southeast were dark and exciting but resulted in a safe landing.

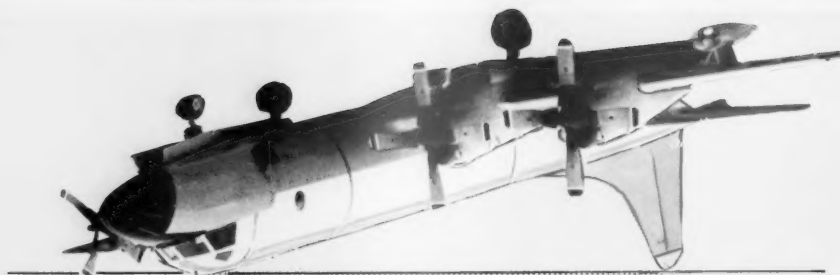
The obvious lesson learned on this trip was to seek out the IFR Supplement and read it thoroughly. Naturally, all of us look for items such as fuel, JASU, arresting gear, and PPR information for our destination. But do we check operating times as carefully? *Operating times become very im-*

portant when arriving at a destination after 2300 local. And then there's the weekend vs. weekday complication. Another gotcha is a weather brief that requires no alternates, as was the case with our flight. Instead of just blindly accepting the fact that alternates aren't required, it might be prudent to select an alternate anyway that's suitable not only from the weather standpoint but also the IFR Supplement standpoint. In the event of lost comm, this added precaution could prove very beneficial. It should be noted that many of the Aerodrome Remarks previously found in the IFR Supplement may now be found in Flip Planning AP-1B.

So, when that old common question arises, don't just "check" that old IFR Suppl-a-what . . . read it! ◀

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"I call it a gear-up landing . . . what do you call it?"

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P-3 Wheels-Up Landings

I'M an instructor pilot in a fleet VP squadron who's beginning to wonder not if another gear-up landing will occur in a P-3, but only where and when it will occur. After flying the P-3 for almost 11 years, including duty as an IP in the RAG, I've witnessed no fewer than 10 *bona fide* attempts to land gear-up (where the pilot at the controls was not aware that he'd failed to call for the landing checklist). Luckily, in all these situations, the other cockpit crewmembers were watchful enough to ensure that the gear was lowered.

Within the last 4 months aboard my current squadron, however, I've seen three pilots forget to perform the landing checklist during training flights under simulated emergency situations. Most alarming in these three situations was the fact that only I, as the IP in the right seat, was aware of the situation — neither the flight engineer nor the pilot at the controls was in the know. In all of these occurrences, the "wheels" light had been cancelled at the request of the pilot flying the

aircraft.

I'm now wondering even more why an aircraft as valuable as the P-3 is not equipped with an aural warning device (horn) as are other large aircraft certificated by the FAA. It seems that our present combination of "wheels" warning light and three pairs of eyes, along with a landing checklist (and wheels watches at military fields), will not be sufficient to prevent yet another gear-up landing in the future. The safety record of the P-3 in this regard seems to bear out the prediction.

Wheelswatchmouse

"No Airspeed. Abort!"

TO my right, all I could see were copilots — behind me, nothing but flight engineers (FEs). When I said, "Start No. 1," the response was, "On which wing?" Yes, this is a slight exaggeration, but in this incident, three pilots, two FEs, and one lineman were involved. What 12 eyes missed and what caused the abort was a pair of very conspicuous red pitot covers!

It couldn't be blamed on the tempo of operations or darkness, as it was

just the preflight for a routine patrol on a beautiful VFR day. To some extent, it might be blamed on inexperience. The lineman was inexperienced and missed the covers twice — first on engine starts and later when the aircraft returned to the chocks after an aborted takeoff. A FE, preflighting an adjacent aircraft, pointed out the problem to our lineman.

The second inexperienced person involved was the second mech, to whom the FE had assigned the responsibility of the exterior preflight. Was this an unusual situation? Certainly not. Every squadron has inexperienced personnel. What was lacking in this incident were the other four sets of supposedly experienced eyes. They all should have noticed that the pitot covers had not been removed.

How many times have you walked around the aircraft at the same time the engineers were preflighting and pulling covers? Do you go back and check that all the covers are off? During last night's preflight, did you visually check for removal of the 5th and 10th stage bleed air plugs? NATOPS says the pilot shall ensure that the preflight is completed in accordance with current NAVAIR directives. Does this mean the pilot should help with the autofeather check and take hydrostatic readings of the fuel tanks? Probably not, but some things can easily be checked — namely, removal of all covers, plugs, and pins.

Next time you respond to gear pins on the prestart checklist, think about where the pitot covers, static plugs, and 16 engine plugs/covers are. I won't have to think where they are, I'll know. Will you?

Embarrassedbutwisermouse

Suspected Hot Brakes

A FLIGHT of two F4s returned to base. As the first F4 taxied clear of the runway, smoke issued from the landing gear. Crash vehicles responded. Crash crew personnel were waved away from the aircraft by the RIO with the

ANYMOUSE



shouted assurance, "It's just hydraulic fluid leaking on the brakes. That's common for F-4s."

This same squadron routinely taxis back to the line, without shutting down, despite known hydraulic failures. Their attitude appears to be, "No sweat, it always dumps overboard." I'm sweating it and have told them so.

Hotbrakemouse

See NAVAIR 04-10-506 (Aircraft Tires and Tubes, Inspection, Maintenance, Repair, Storage, and Disposition Instructions), pages 3-17 and 3-18 for guidelines in handling hot brake situations. A smoking brake and wheel assembly should not be treated casually. Paragraph 3-44 states: "An overheated tire and wheel assembly can explode violently, causing fatal injuries to personnel as well as major damage to aircraft. The dangers of explosion are considerably increased when a fire occurs, since the extreme heat of the fire is added to the heat generated by the brake." Consider paragraph 3-47: "When an overheated wheel and brake assembly or wheel brake fire occurs, all personnel not required for fighting the fire or cooling the assembly should evacuate the immediate area."

The RIO's comments to Hotbrakemouse were not only totally incorrect but showed a lack of courtesy to someone trying to do the job he's trained to do.

Safety For All?

THERE we were, standing at weekly quarters formation at the NAS and listening to a pep talk on safety by the CO. This particular morning, a squadron picture was to be taken. A CH-53, TA-4J, and an A-4F were parked on the line as background for the picture. Someone decided the aircraft had to be moved closer together. The A-4 line chief and one of his men departed to get the proper yellow gear to move the aircraft. Naturally, they felt an "invisible pressure" to move faster.

The operations officer formed his own crew to do the job. The TA-4J was pushed by several men, and there was no brake rider in the cockpit and no tiller bar to steer the nosewheel. As soon as the chocks were pulled, the aircraft rolled forward and the nose turned left, heading directly for the CH-53. A quick-thinking enlisted man, observing what was happening, rushed to the nose tire and acted as a human tiller bar. The TA-4J was finally maneuvered into position (luckily, without a crunch).

The ops officer was informed, not

once but three times, that "you can't push that bird without a brake rider." These warnings fell on deaf ears, and it was through pure luck and the enlisted man's efforts that a crunch didn't occur. Not satisfied with this near mishap, the ops officer and his crew continued their nonstandard evolution and moved the A-4F — still without benefit of a brake rider or tiller bar.

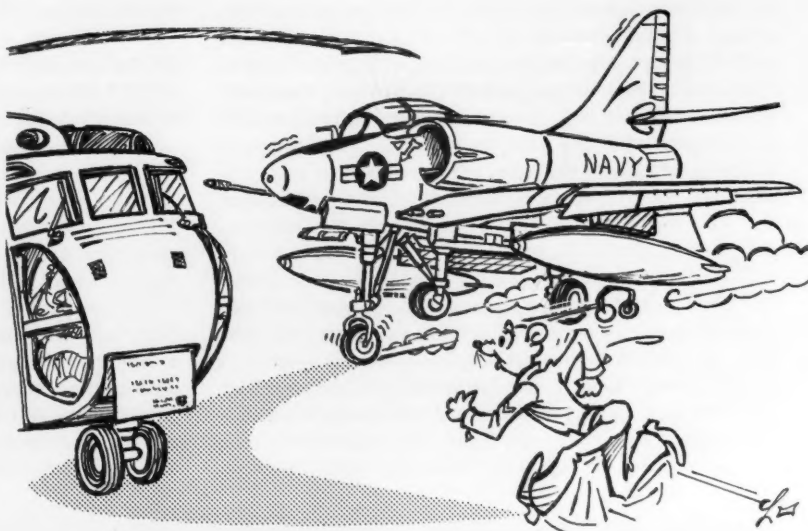
Throughout this entire sequence of events, the CO, XO, maintenance officer, maintenance CPO, and most QA personnel were observing. But no one did anything except the one enlisted man, and what he did, though well-intentioned, was dangerous.

We hear a lot about safety and safe operating procedures. Do they apply to all personnel all of the time or only when it fits our needs?

Confusedmouse

Obviously, this CO was only giving lip service to safety. It would be interesting to know what his squadron's safety record looked like for the year. We would like to believe that this incident was very much the exception to the rule that safety comes first.

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LOOK OUT!

Midair collision in the CV pattern

By Richard A. Eldridge
APPROACH Writer

"I THEN told the air boss I was overhead at 21,000 feet, dirty, with only one nosewheel tire. He told me I'd be recovered last. My recovery began at 1530. Taking up a heading of 240 degrees, I flew away from the base recovery course of 060 degrees. At 12 DME, I started a 2,000 to 3,000 fpm rate of descent with 180 knots, gear down, and flaps up. At 15 DME, 16,000 to 17,000 feet, I felt a heavy impact on my port wing and fuselage. I was looking out my starboard canopy at the time of impact. I then looked to port and saw an F-4 trailing a large amount of debris pitch up about 500 to 1,000 feet in front of my aircraft. The planform view that I saw of the F-4 was with the starboard wing slightly down (15 to 20 degrees). Before I could focus to make out any specific features, my aircraft departed to port.

"I seemed to be spinning, airspeed indicator showed zero, and altimeter read 15,000 feet. The controls were still movable, but I felt no reaction from the inputs. I put in anti-spin controls and then looked to see what the damage was.

"My port wing was badly mangled. At least one-half was completely gone, along with the MER from Station 1. Altitude was 13,000 feet, and at this time I decided to eject if I passed through 10,000 feet. I transmitted a Mayday at approximately 1532. The departure and spin were mild initially. Then, things progressively got tighter, with intermittent negative G and nose tuck. Passing 9,000 feet, using the upper

handle, I ejected. I estimated my wing position to be 90 to 120 degrees angle of bank.

"I didn't see the F-4 during any of this evolution. Seatman separation was normal. I inflated my LPA, took off my mask, deployed my seatpan, and checked for the position of my Koch fittings and the condition of my chute and risers. I released my chute when the raft hit the water. I swam to the raft, disconnected my seatpan, and climbed in."

The A-7 pilot was rescued uninjured and returned to the carrier by a SAR helo. Unfortunately, the pilot and RIO of the F-4 failed to survive this tragic midair collision and were probably killed at the instant of impact.

The A-7 had launched at 1339. Just after being catapulted, the pilot was informed that something had dropped off his aircraft. An airborne inspection by another aircraft revealed that the port nosewheel tire was missing. For the rest of that event, the A-7 was held overhead the carrier in a dirty configuration until its 1530 recovery began.

Air intercept control was the F-4 crew's assigned mission. They were to be controlled by one of the screen destroyers. Following a normal launch at 1525, the F-4 switched to the CAP control frequency of a DD. When the RIO checked in, the DD controller did not acquire radar contact with the F-4 due to the large number of aircraft in the VFR pattern near the carrier. A transmission by the F-4 requested a Link-4

Do you need a



check from the controller. The F-4's final transmission acknowledged the DD's Link-4 status. This was 45 seconds before the midair.

In looking at the mishap, the most logical explanation was the failure of the F-4 crew to visually acquire the A-7 while climbing VFR. From what little debris was recovered from the two crash sites, evidence tended to corroborate that the F-4 struck the A-7's port wing from below and behind the A-7.

One factor possibly contributing to the mishap was the elevation of the sun. The A-7 would have remained in the same relative position in the F-4's windscreen all the way to impact, with the sun's position at the same constant bearing, although a number of degrees higher.

There was little likelihood that the A-7 would have observed the F-4 approaching from below and behind. Normal scan pattern in a holding situation would devote a minimum of attention to the rear quadrants.

Lack of significant damage to the A-7's Station 2 and 3 pylon fairings indicated the most probable point of collision was at Station 1. Since the wings of the F-4 presented a normal planform appearance to the A-7 pilot following impact, the point of impact was probably not in the wing area. It was later speculated that the impact occurred near Station 1 (MER and 6 Mk-76s) of the A-7's left wing and the F-4's

forward fuselage area. This impact probably resulted in incapacitation or death of the F-4 crew and damage to the cockpit areas, precluding ejection.

No one's ever stated that aviation operations in the vicinity of an operating carrier aren't extremely demanding. Lookout doctrine is something which may not be given conscious attention at all times, but aircrews must be intensely aware that a midair collision is always a possibility, especially within the area of the carrier's traffic patterns. Lookout doctrine must continue while you're conducting other postlaunch functions such as combat checklists, fuel transfer checks, and ECM or weapons systems checks. The aircrew has the ultimate responsibility for collision avoidance, regardless of any control they may receive. This aspect of safety should receive special emphasis while flying in a high-density traffic area as typified by the 25-mile radius around an operating carrier.

The limitations of the see and avoid concept as applied to high-speed tactical aircraft with complex systems requiring extensive head-down cockpit time have long been apparent. Therefore, air traffic procedures in high-density traffic areas must be designed to minimize the opportunities for VFR conflicts. Due to the large number of aircraft present during launch and recovery operations, there's no environment more needy of conflict-free traffic rules than Case I operations around a CV.

any more convincing that you've got to look out to stay alive?



Just where is this “invisible

WE were flying H-46s in waters east of Africa. NAS Tropical Island needed some supplies carried from the base of the tower to several destroyers at anchor in the lagoon, and as we flew back and forth from the VERTREP pickup point to the decks, we saw the backs of beach party workers get shiny with perspiration. Palm trees swayed easily in the background.

Suddenly, something happened to us. An invisible pressure to hurry our operations stole over us, and soon we were sliding in for dear life. The beach party, also impressed with the unspoken “operational necessity” implicit in the situation, was hustling parts and stores into cargo nets almost as fast as we could get to them. “Almost as fast” means they were falling steadily behind . . .

Ahead of us, the lead *Sea Knight* swooped down for two new rotor blades for a seagoing H-2 detachment that had been waiting for them for over a month, but when we got there, the beach party (still glistening) didn't have a load ready for us, so we followed the lead 46 back to the ships for another ship-to-shore lift. En route to the anchorage, at 200 feet AGL, we saw the rotor blades suspended beneath the helicopter ahead of us begin to swing dangerously.

Then, to our amazement, one of the \$20,000 blades fell silently into the lagoon. The whole world stopped.

“I don't believe it!” I said to the other pilot on ICS.

I got on the radios.

“Redwing 19, this is Redwing 05, we saw the blade fall and we don't have a load, so we'll go down and retrieve it. We've got the crew chief standing by with a grappling hook, and we'll be able to at least hold it on the surface until a small boat can get here, over.”

“05, Redwing 19, do not go down to that blade. We dropped it, so we'll get it after we take this other one to November Six Kilo.”

“19, 05, there isn't enough time for that. We're 200 feet from the blade and it looks like it's going to sink within 2 minutes or so. We'd like to —”

“Redwing 05, we're going to get that blade. You take your

rotor wash away from it and go back for another lift. That's an order.”

“But 19, you're 5 minutes away now, and the blade's on the way down. It's turned vertical in the water, and only an air pocket's holding it up.”

“I said that's an order.”

“Redwing 05, Roger, we're heading back to the island for another lift.”

About a minute later, bubbles testified that the blade was gone forever. As we started back to the ships with another load, we saw Redwing 19 hovering sadly over the place where the blade had disappeared. It was a futile gesture, as if Redwing 19 were trying to bring the blade back to the surface



e pressure," anyway?

By LT Colin W. Sargent



with a force of pure will, as if the Amazing Kreskin were at the controls, hoping to magically levitate it back to reality.

The beach party (who should have worn protective gear against the sting of sandy rotor wash, no matter how hot it was) had hurried too much and not bound the two blade containers together in the sling. We helo crews had been in such a rush to move supplies in "record time" that we hadn't realized that the beach party was throwing things together poorly.

Though tempers were flaring, the palm trees continued to sway easily. The sun was so hot it was unbelievable.

We were on deployment out there in no man's land, where everything seemed to matter twice as much, where we heard relatively junior officers (LCDR and below) with ASAP mentalities invoking the term "operational necessity" more frequently than survivors at a Battle of Savo Island reunion.

And yet, it was peacetime. We were relatively far from the whites of prying eyes. No one had declared war on the United States for quite a while, but somehow, since we were operating on extended deployment far from home, we'd started to look at "Gonzo Station" as a place where no holds were barred, a

place where we'd landed after falling off the earth's flat surface.

All the pilots in the detachment were growing beards and we looked like Robinson Crusoes with faded wings on our *Velcro* patches. We were veterans, shellbacks. We were where the action was, where the real Navy was, "where the rubber met the proverbial road," where the going was fast and furious, where the flight suits and bug juice and *Reef Points* sayings didn't smell as sweet as they did Stateside. We were gutsier than Ernest Hemingway in our end-of-the-month reports. We had nicknames and good tans and fleet experience and positive control movements and we were becoming bad pilots.

Checklists went like lightning — or the silence immediately following lightning.

As typical "take charge" guys, we were facilitating situations instead of helping to solve them.

I'll never forget Redwing 19 hovering over the open lagoon where the blade (used) to be, next to the islands in the stream.

How had we been caught up in this intoxicating rush? This invisible pressure to hurry under the false armor of "operational necessity" is a real danger to both a wartime and a peacetime Navy. In order to be mission-proficient, we should, as the saying goes, *fly the way we train*. Otherwise, why train? Invisible pressure is, I'm sure, the kind of operational paranoia that the highest officials in the Navy chain of command don't want permeating the attitudes of rank and file pilots.

Perhaps peacetime administrivia is part of the problem. For example, at the time Redwing 19 dropped the blade, "everyone else" was racking up 16,000 accident-free hours in PAO-blue skies while moving VERTREP lifts every 30 seconds. Naturally, we'd put invisible pressure on ourselves in order to keep pace with the *achievement inflation* of the modern Navy of the 1970s and 1980s. No senior officer had ever ordered us to "worry" — we'd just taken that awesome responsibility upon ourselves.

I feel that if we don't practice safety during peacetime, we'll have precious little sound technique to fall back on in a real conflict.

Weeks later, by the way, Navy divers were able to find the sunken blade and bring it back into the supply system. I hope a few swirling eddies surrounding this blade's story will help create a similar movement to resurrect safe practices in our "operational," peacetime Navy as well. Safe techniques are the blueprint for wartime proficiency and expediency. Let's, along with *Alberto VO5*, get back to the basics. This peacetime nervousness isn't winning us any air medals! ◀

LT Drew Stoker
LT Chris Vance
VF-143

AVIATION in general and carrier aviation in particular have a special way of testing those who venture there. On occasion, a heart-stopping emergency presents itself. Some emergencies are deferred-action types where the pilot or crew can break out the book and make decisions based on NATOPS checklists or radio for assistance. Then there are those immediate-action thrillers that simply require rapid response and professional airmanship to save the day from disaster. The stage is set now; let's get ready for a cat shot!

The preflight and man-up were normal, all poststart checks were satisfactory, even the wipeout on catapult No. 3 was standard. The pilot, LT Drew "Stroke" Stoker, and the RIO, LT Chris "Tuna" Vance, were just nanoseconds away from a major mishap as LT Stoker saluted the safety observer. At the end of the stroke, accelerating in Zone 5 afterburner, the *Tomcat* leaped into the air, but the control stick could not be moved forward to counter the nose, which was pitching up rapidly through 30 degrees.

"No forward stick!"

"Get the nose down!"

"Do you have it?" asked the tower. Communications and thoughts began to fly in a compressed time scale; forward trim, lateral stick, right rudder, reduce thrust, right wingover!

"Great! The nose is coming down, Tuna, but the stick's still stuck." LT Stoker leveled the wings and tried more wipeouts, but trim, banging, and muscling the stick failed to free it. LT Stoker yelled, "There it goes again!"

"Well, get it down again! Airspeed and altitude are OK." Again the aircraft pitched up, they worked the stick some more, and left rudder and a second wingover ensued.

"Keep working it; 1,500 feet."

"The nose is coming down again. It just broke free! I'm flying the airplane!"

LT Stoker and LT Vance slow-flighted the aircraft and came back aboard for an OK-3. Engines are certainly not the only area of concern for foreign objects in an aircraft. Postflight inspection revealed a piece of FOD, a 1-inch by 3/8-inch hex head nut, in a compartment near a flight control bellcrank. It was a nut that should have been safety wired but wasn't.

This hazard could easily have become a mishap. LT Stoker's superb airmanship, aided by LT Vance's airspeed, attitude, and altitude crew coordination calls, mark them as aviation professionals of the finest caliber.

The Chinese have a word for crisis made up of two characters: danger and opportunity. In the final analysis, danger gave these fliers the opportunity to dramatically bring their *Tomcat* home — safely. LT Stoker's and LT Vance's combined quick response and unfailing efforts to maintain control of the aircraft saved a valuable asset and merit a strong Bravo Zulu.



LT Drew Stoker, left; LT Chris Vance, right.

BRAVO ZULU

LTJG Kurt Zobel
ENS John Hall
VT-2

Mr. Raymond Harper
Jacksonville ATC

IT was a typical 2,000-foot overcast winter day at Whiting Field when LTJG Kurt Zobel and ENS John Hall launched in a T-34C for their BI-5. Preflight and engine run-up had posed no problems, and 15 minutes later, they were established in the North MOA at 14,500 feet in beautiful, clear sky, performing required maneuvers above a 10,000-foot broken layer.

Upon rolling into a 30-degree angle of bank, both the instructor and student heard a whir and a pop accompanied by a sudden drag on the aircraft. Their first suspicion was that the gear had been lowered, but a quick check proved that assumption false. LTJG Zobel promptly took the aircraft and feathered the prop while turning toward Whiting and transitioning to the maximum range glide airspeed. An emergency was declared to Jacksonville ATC, and shortly thereafter, the controller, Mr. Raymond Harper, informed LTJG Zobel that Brewton OLF was the closest airfield and began vectoring the aircraft in that direction.

Having already passed through the broken layer at 10,000 feet, LTJG Zobel now began searching the undercast sky for a hole to pinpoint his position. The aircraft was passing through 9,000 feet, and the pilots were informed that they were 8 miles from Brewton. ENS Hall then told LTJG Zobel that the generator had dropped off the line, leaving their battery as the only power source. The instructor now had to make the critical decision to penetrate and hopefully land at Brewton, somewhere under the clouds, or bail out.

Assessing battery voltage, the fact that he had to trust Mr. Ray Harper for position information, and the fact that the bases of the clouds were unknown, LTJG Zobel decided to penetrate the clouds and bail out if still IFR by 1,700 feet. At 4,500 feet, the controller informed LTJG Zobel that he was directly over Brewton.

The T-34C began a spiral down to and through the clouds after a last check of battery voltage showed plenty of power to run the required instruments. The trip through the clouds seemed endless. At 1,700 feet, they finally had a clear view of the ground and the welcome sight of Brewton OLF directly below. LTJG Zobel maneuvered the aircraft through the emergency landing pattern to an uneventful landing. Quick decisionmaking, excellent procedural knowledge, and the aid of the controller all combined to yield a happy ending. (Incidentally, the cause was a broken air line to the fuel control unit, resulting in minimum fuel flow and the lack of engine power.) The aircraft was fixed and ready to fly again that same day!



Mr. Raymond Harper, above; below left, LTJG Kurt Zobel; ENS John Hall, right.





By Russ Forbush
APPROACH Writer

22

HERE it is, aviation personnel — a chance to join the S. P. C. A. Not the nonprofit society for animals, mind you, but one especially organized to bundle up all the money possible. Our acronym stands for "Society for the Prevention of Cruelty to Aircraft." The Society's goal is to save aircraft from bruises, bashes, fractured red lines, internal disorders, and poor diagnostic and remedial treatment. There are no membership fees. The only requirements are that members strive to protect our endangered species against unnecessary cruelty and from being destroyed "before their time." In so doing, the Society will bank bucks for the Navy, and members will have their pet aircraft for years to come.

What kind of cruelty and destruction are we talking about? Some samples described below should answer that question.



SH-3. An SH-3 was taxiing back to the line under the direction of a plane captain. The pilot at the controls (PAC) was in the right seat, with the helicopter aircraft commander (HAC) in the left seat. As the PAC taxied inbound on the 75-foot-wide taxiway, he had to guide the H-3 between parked transient helos on the left and an improperly parked A-7 on the right. The lateral separation was just over 63 feet. (The main rotor diameter of the H-3 is 62 feet.) Realizing that rotor clearance would be "tight" but believing he could make it, the PAC directed the HAC and three crewmen in the rear to monitor port and starboard side clearances. He continued taxiing at a slow speed until (you're ready for it, right?) the H-3 main rotor mated with the A-7 tail section.

Here's a case of a PAC trying to thread a small needle and the HAC keeping mum and letting him give it a go. By the way, what was the plane captain (director) doing? There was a lot of poor judgment associated with this one. Why someone didn't say **stop** is inconceivable. Maybe nobody told the H-3 crew that the A-7 breed of aircraft doesn't need its "tail" clipped. Fortunately, no one was hurt (except the poor A-7), and damage was limited. Join the S. P. C. A., guys.

F-4. Two F-4s (102 and 109) launched as a section from their CV to conduct routine night intercept training. Upon completion of the training, the aircraft were marshalled individually, with 102 departing Marshal first to a normal penetration, approach, and arrestment on the No. 2 wire. During rollback, 102 became canted about 20 degrees port of the landing area centerline and hung up on the crossdeck pendant. With 109 only 47 seconds out (normal interval is 60 seconds), the senior LSO looked up the flight deck and observed the flaps and tail-hook of 102 in transit. He then turned to concentrate his attention on 109, which was 1½ to 2 miles out. Unknown to him, 102 was not clearing the landing area at the normal rate.

Primary was manned by the assistant air officer (acting as air officer) in the left seat and by the flight deck officer (acting as assistant air officer) in the right seat. The flight deck officer was monitoring departure frequency and observing the completion of a launch, while the assistant air officer was on 102's approach frequency and was preoccupied with getting 102 out of the landing area. With a fouled deck and 109 on final, the senior LSO did not look up the deck at 102 but assumed that the F-4 had cleared the landing area.

Now, 109 was in-close. The red deck status light was on, indicating the deck was fouled. Both LSOs waved off 109 at the normal waveoff position, using flashing red lights and voice transmissions. Because he'd been working a high ball, the pilot of 109 was slightly back on the power and a little nose low. He initiated a normal waveoff by going to military power to arrest his rate of descent and adjusting the nose position to a landing attitude.

In this attitude, 109's transition to climb was minimal. The F-4 was 10 to 12 feet above the flight deck, abeam the LSO platform, and slightly right of centerline. It wasn't until 109 crossed over the ramp that he caught the assistant air officer's attention. 109's pilot saw the tail of 102 sitting in the landing area and selected *full afterburner*. Unfortunately, he wasn't able to get away. The right mainmount of 109 impacted 102's rudder and vertical stabilizer.

This mishap came within a whisker of being a disaster. At a minimum, two F-4s and their respective handlers could have been erased. The LSO wasn't aware he had a fouled deck until 109 was in-close, which precluded his giving an earlier waveoff. The assistant air boss failed to monitor 109's approach and inform the LSO of the difficulty 102 was having clearing the landing area. SPCA membership forms are on their way.



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A-7. An A-7 pilot was on a night visual straight-in approach to an AFB. At 7 nm, the pilot reduced power and deployed the speedbrake. Shortly thereafter, he lowered his flaps but failed to lower the landing gear. He reported gear down to the tower at 4 nm. The pilot controlled his glideslope by referring to the VASI lights. Just prior to touchdown, he flared the A-7 to save wear on the tires. With the speedbrake extended and the landing gear up, the aircraft contacted the runway 1,000 feet from the approach end.

Moments after touchdown, the pilot observed flashes of light outside his cockpit. As airspeed decreased, the *Corsair II* settled on the speedbrake and tail cone, eventually sliding on the bottom of the fuselage. At some point in the slide, the speedbrake retracted and the landing gear "attempted" to extend. Yawed 45 degrees to the right, the A-7 came to rest after a 4,000-foot slide, about 10 feet from the runway centerline. The pilot secured the engine and evacuated the aircraft.

Later, he stated that he'd lowered the landing gear prior to landing, but a postflight maintenance check revealed all systems were operating properly. One factor that may explain why the pilot failed to lower the gear was his departure from

normal procedures. He'd lowered the flaps first, which was not his usual procedure. A break in a procedural pattern can set a pilot up for dangerous aberrations, and this mishap is no exception. Treatment for the A-7 cost the Navy \$51,000.

S-3. During an S-3 catapult launch, the pilot's multipurpose display (MPD) came loose from its housing in the instrument panel, grazed the pilot's shoulder, struck the TACCO's leg, and came to rest in the center aisle. Happily, there were no injuries. What caused this to happen?

Let's take a look. The day before the mishap, the AE shop had been tasked to work on a discrepancy involving the S-3's master-arm search power advisory light. An assist MAF was issued to the AT shop to remove the MPD. Instead, the AT shop supervisor directed the AE shop to remove it.

Prior to the evening work shift change, the MPD was placed back in the instrument panel by AE personnel but not secured with the four screws which hold it in place. During the shift change, the AE and AT shop supervisors received a passdown, but no mention was made of the unsecured MPD. Mysteriously, the AT shop supervisor was handed the four MPD retaining screws. Neither the advisory light MAF issued to the AE shop nor the assist MAF issued to the AT shop had been signed off, and both shop supervisors remained unaware that the S-3 was on the flight schedule.

This mishap was caused by the following three factors:

The maintenance control remove-and-replace VIDS MAF was not properly listed as a downing discrepancy in accordance with the Subsystem Capability Impact Reporting (SCIR) Documentor's Handbook. The S-3 should *not* have been released for flight.

The AT shop, which was responsible for MPD removal, delegated this responsibility to the AE shop.

An improper and incomplete passdown was given to the relieving AE shop supervisor concerning the progress of the work. That this S-3's internal disorder (flying MPD) was not more serious is pure luck. Back to the basics for this pack.

A-6E. An A-6E aircrew was scheduled for a day manual and visual weapons delivery mission. The aircraft load consisted of six Mk-76 practice bombs on Stations 2, 3, and 4, and Aero-1D fuel tanks on Stations 1 and 5. Normally, this squadron's aircraft were configured with fuel tanks on Stations 2 and 4. This A-6 was reconfigured about 4 days earlier in preparation for an upcoming exercise. No one told the aircrews about this change.

The flight brief and preflight were conducted in accordance with NATOPS, including a check of the (correct) external stores load. Ordnance personnel set the correct armament tapes in the armament control unit (ACU). During start and poststart sequences, the crew experienced difficulty in starting the left engine, and the search radar video was malfunctioning. The left engine problem was corrected, and maintenance troubleshooters took care of the radar difficulty. Prior to taxi, the B/N completed the ACU checklist from memory and, in so doing, set incorrect tapes in the ACU. The pilot didn't check the tapes prior to the mishap, nor did he complete the appropriate NAVAIR checklist as directed by the A-6E NATOPS Flight Manual.

On the first three hot passes over the target, five Mk-76 bombs were dropped from Station 3. For the fourth hot pass, the B/N selected one Mk-76 from Station 3 and two Mk-76s from Station 1. The ACU sent release signals to Stations 1 and 3, which caused the Aero-1D fuel tank and one Mk-76



to be dropped. Upon release, the Aero-1D hit the trailing edge of the left wing where the inboard flap meets the outboard flap.

This mishap occurred even though the pilot and B/N had briefed and visually observed the correct ordnance load prior to flight, because they'd failed to set up the ACU accordingly. At no time prior to the mishap did the pilot check the ACU setting in accordance with written directives. Had he done so, it's unlikely that this mishap would have occurred. The B/N was exposed to three sources of sensory evidence of the correct external load — he was told during the brief, he saw it during preflight, and he touched each loaded station during preflight. This mishap was loaded with poor crew coordination and communication.

While prudence would dictate that aircrews be advised of the new loading configuration, this crew was completely briefed prior to flight about the proper tape setting and the physical location of the load. The A-6 lost usable aircraft control surfaces because an aircrew failed to use checklists properly. Ouch!

These mishap examples are but a few of the many that occur each year and fall into the category of cruelty to aircraft. Feeding FOD to a flier's best friend is another example of unusual cruelty and results in numerous engine transplants annually. It's no wonder that COs and higher authorities roar like angry elephants when they're confronted with "dumb bunny" mishaps such as those described above. Last year, naval aviation reached its finest hour by attaining the lowest mishap rate of all time. Now, we must go beyond that and eliminate the *so-called minor mishaps* that collectively cost big and hard-to-get greenbacks. While there's a little levity associated with this article, its premise is deadly serious. Let's band together and join the S. P. C. A. The aircraft you save may carry you to new altitudes someday.



By Dr. M. S. Borowsky and
LT R. A. Wall
Naval Safety Center
with LtCol K. C. Corcoran
MAG 32

WOULD YOU FLY WITH THIS MAN?

(sleep/wake cycles and naval aviation mishaps)

Mountain Search.

THE duty SAR crew has been on alert since 0800. A morning aircraft systems checkflight has gone well and the crew is looking forward to an afternoon checkflight before standing down to a recall alert status. Suddenly, the man-up for the afternoon flight is interrupted at 1430 by the real thing, an aircraft down in the mountains. Quick SAR brief, flight packet, area maps, start 'em, spin 'em, launch. 1445.

"Departure, Pinetree 404 is outbound, VFR, switching."

"Pinetree 404, frequency change approved."

"Pinetree 404."

At 0030, the crew returns after 8 hours of hugging the cloud cover over the mountains while looking for a hole through which to link up with the survivors of the crash. No joy. Postflight. The yellow sheet ritual is interrupted by another real thing, a MedEvac to a hospital 100 miles away. Top off, start 'em, spin 'em, launch. Check out with Departure, VFR into the black nothing with thunder bumpers and cumulo granite to the west. 0115.

Time awake: 19.0 hours.

Flight time today: 8.0 hours.

Meals: 1 box lunch since noon, 13 hours before.

Weather: 5,000 broken/overcast, rain showers en route.

Mission: life or death.

Altitude: 500 AGL.

Prognosis: a mishap waiting to happen?

We interrupt this hop to inform you that recent research shows that inflight performance tends to degrade if a flier's circadian sleep-wake cycle is disturbed. (A circadian cycle is any vital process or bodily function that tends to repeat in approximately 24-hour cycles.)

High tempos of operations or dramatic changes in time zones need not be present to disrupt the cycle, although these two will surely do it. The cycle disruption will occur if



a person is awake when his body is "expecting" sleep or trying to sleep when his body is "expecting" activity, the latter of which will result in a poor quality of sleep that will be evident later in the day.

OK, back to the story . . .

Twenty minutes en route, the navigation and crew coordination start to break down. Familiar patterns of lights on the ground are no longer familiar. Ground fog? Winds aloft? Fly the compass. Break in the clouds. Lights look familiar . . . "How the hell did we get here?" Skirting the mountains that should have been 15 miles to the west.

Continued

ALL NAVY/MARINE CLASS A FLIGHT/FLIGHT RELATED PILOT FACTOR MISHAPS

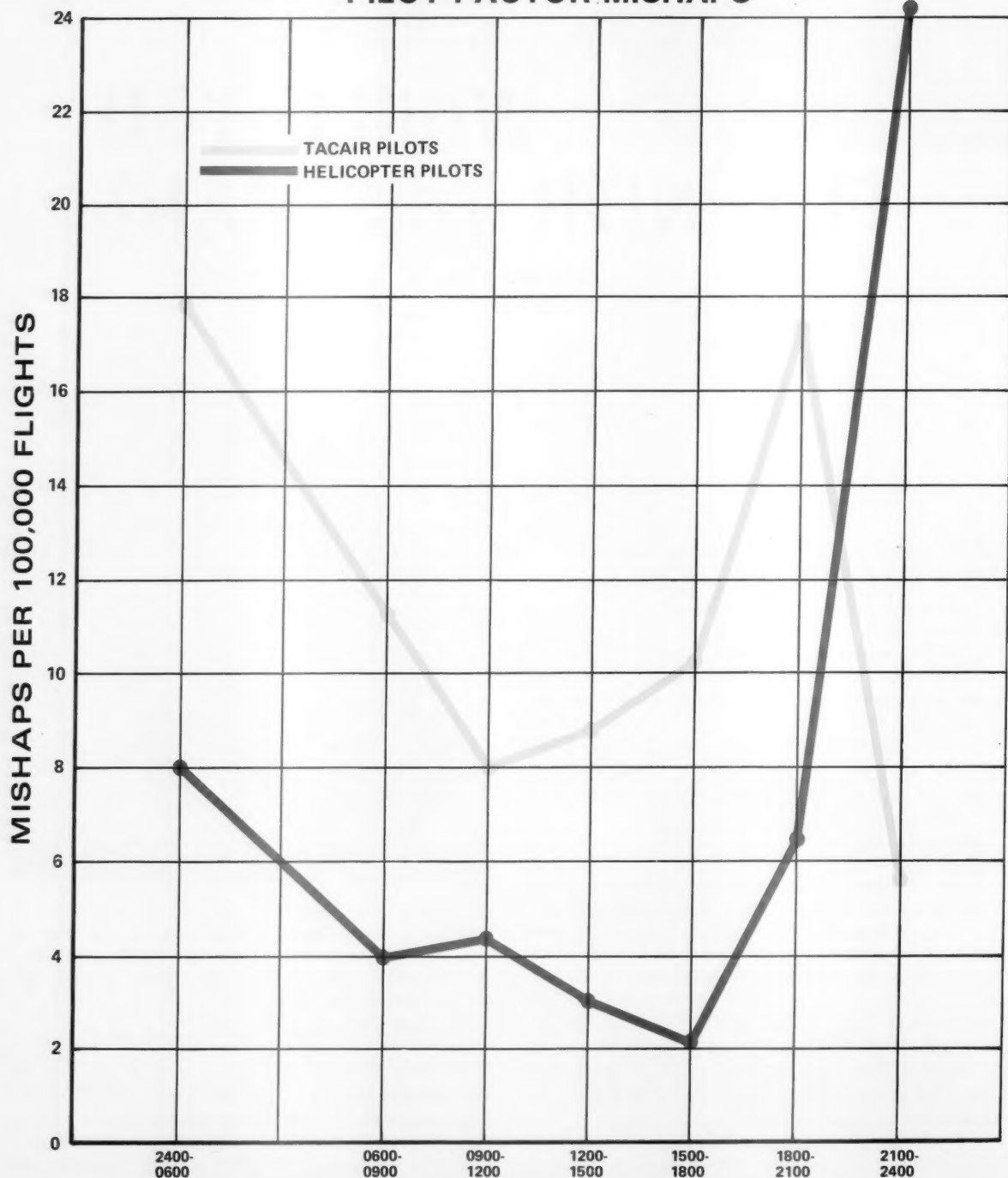


Fig. 1

TIME OF DEPARTURE
The periods showing the highest rates do
not coincide with normal working hours.

The situation is deteriorating. Inadvertent IFR. The anti-smash light wildly dancing into the cockpit off the reflecting pea soup. Four eyes on the gauges.

The situation *has* deteriorated.

"I've got vertigo. Can you take it?"

"I've got vertigo too, but I'll try."

"You've got it?"

"Yeah, I've got it, I think."

Inadvertent IFR, 180-degree turn till clear, OK. Roll in, AOB, power, altitude,

"Watch your nose!"

Thirty degrees nose high and climbing. Bring it down, too fast, stomach just went through the floor. Wild oscillations about all axes and then some.

"I've got the collective and the rudders! You take the cyclic!"

"Rog, I've got the cyclic (and the worst case of vertigo I ever imagined)."

After what seems like 30 minutes, the pilot flying the collective manages to get his vertigo under control enough to switch the radio to Center and stammer out a request for an en route IFR flight plan to VFR on top.

The loss of an aircraft and all souls on board is narrowly averted, but the pilots have been forced to use superior airmanship to extract themselves from a situation their "superior" judgment *never* should have gotten them into in the first place!

Endless CATCC Cycles.

The launch cycles have been going on for what seems like years. Five flights in the past 72 hours have been enough to put this F-14 jockey in the bag. He's just trapped, and now he's on his way to the readyroom before retiring for some sweet sleep.

What's this? Now he's been called up to be a squadron rep in CATCC for another *Tomcat* flier who's overhead and in trouble.

"Terrific," he thinks as he makes his way to the red-lit room. Arriving, he finds the situation has deteriorated to the point where the airborne F-14 will have one shot at a trap before fuel forces him to Bingo.

"No sweat," he decides. "Bingo fuel looks good; working separately, we've both come up with pretty much the same figure."



"Left and correcting," drones the controller. In close, "Call the ball."

"Good. The LSO's got him. Where's the coffee pot?"

BOLTER, BOLTER, BOLTER.

"Good grief! So much for the sack. Uh, what? . . . yeah, execute the Bingo profile. We'll follow ya all the way, kid."

The "kid" up in the cockpit is just getting his adrenaline down to a manageable level following the bolter. "Bingo profile, huh? No sweat. Fuel's good and everything's working except for the PC-2. Just an hour and a half flight or so to the beach and then I can get some sleep. Two full hops, a third to the cat and 'canked,' and a full day as SDO sure did me in. Be glad when this is finished."

Finished it soon is, as the F-14 flames out short of the divert airfield with over 1,000 pounds of fuel lacking for a successful Bingo. The ejection is good and the sea story better than the one planned.

To determine if mishaps in naval aviation are related to desynchronized sleep-wake cycles, it's necessary to carefully examine pilots' flight histories preceding missions in which no mishaps occurred as well as those terminating in mishaps. For this study, we examined Class A flight and flight-related pilot factor mishap rates as a function of departure time in order to appreciate somewhat the magnitude of the problem. Our data (see Fig. 1) shows that mishap rates are significantly related to the time of day. During the 0600 to 2100 period (the time in which the vast majority of flights originate), the TACAIR mishap rate is highest between 0600 to 0900 and 1800 to 2100, while the helicopter rate is highest between 1800 and 2100.

Additionally, though flight activity is minimal during the 2100 to 0600 period, the TACAIR rate is highest from 2400 to 0600, while the helicopter rate escalates from 2100 to 0600.

The periods showing the highest rates do not coincide with "normal" working hours, i.e., 0900 to 1800. While it's true that other factors inherent in night flying are imposed on aviators flying the 2100 to 0600 patrols, the sharp rise in mishap rate for both TACAIR and helicopters during the 1800 to 2100 period (though fewer flights are involved), when it may still be light outside, tends to give credence to the impact of *circadian desynchronization* as a possible factor in some mishaps.

More important, though, is the fact that nighttime is nighttime, and even those with the "right stuff" can do precious little to alter that fact. Circadian desynchronization, on the other hand, is something that both you and your schedules officer have *direct control* over.

Keeping your circadian rhythm in sync is a far cry better than falling asleep, getting vertigo, or incorrectly applying emergency procedures while flying at night.

It's up to you. Don't be afraid to tell your operations department if you're temporarily burning out. The schedules desk is supposed to consider your sleep/wake cycle in *advance* rather than "put out fires on a daily basis."

Don't let yourself be one of those fires!

Out of sight

...but not out of mind!

By Russ Forbush
APPROACH Writer



"Upon impact, the pilot felt the bird and pieces of canopy and windscreen strike the side of his helmet, neck, and left shoulder. Although his visor was down and not broken, he was unable to open his left eye and couldn't see through his visor when he opened his right eye."

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THE story that is about to unfold is one of courage, skill, and coolness on the part of an aircrew during an extremely dangerous situation. This is a classic example of aviators being prepared because they were flying by the book.

The pilot, Capt Andrew Allen, and his RIO, LtCol John Sease, were scheduled for a late afternoon low-level navigation hop. Briefing, preflight, start, taxi, and takeoff were uneventful. Weather was no problem, with visibility in excess of 6 miles, no cloud cover, and an obscured horizon.

Following takeoff from MCAS Beaufort, the VMFA-312 crew flew their F-4S to an assigned heading and began the low-level navigation portion of the flight. By 1745, the *Phantom* was on the 300 degree radial, 34 miles from the Myrtle Beach TACAN.

Suddenly and without warning, a large bird smashed into the pilot's left quarter windshield, shattering it. The bird then entered the forward cockpit, struck the pilot on the left shoulder, damaged the left side of the ejection seat, tore a hole in the parachute retaining case, and exited through the left side of the front canopy. Blood and parts of the bird were splattered throughout the front and rear cockpits.

The pilot felt the bird and pieces of canopy and windscreen strike the left side of his helmet, neck, and left shoulder. Although his visor was down and not broken, he was unable to open his left eye and couldn't see through his visor when he opened his right eye. Instinctively, he immediately started a gentle climb to a safe altitude and began to slow the aircraft. He raised his blood-spattered visor and

assessed his physical condition and that of his aircraft. The RIO also received a shower of debris and blood that covered his visor.

Communications were difficult. Because of the blow to his neck, Capt Allen was unable to talk, and due to the windblast, he could only hear his RIO faintly. Intercockpit communication was conducted with the help of the pilot's remaining (right) mirror.

Following the initial impact, the pilot found the *Phantom* to be controllable but was concerned about his ability to safely recover the aircraft because of his injuries. Within a few minutes, however, Capt Allen was able to clear much of the debris from his left eye, his vision began to clear, and he was able to determine the limits of his shoulder injury and the cuts on his throat.

Aircraft damage appeared to be limited to the cockpit area, but it was significant. With the left quarter panel windscreen and the left half of the front main canopy destroyed by impact and 80 percent of the remaining canopy as well as the forward center windshield obscured by blood and other debris, the pilot's visibility was limited to the right quarter panel.

Having determined that his aircraft was controllable and that he was able to fly it, Capt Allen decided to recover at home base, even though a closer airfield was available. He reasoned that MCAS Beaufort was familiar to him and the area would provide sufficient visual cues to enable him to accomplish a safe landing with his still-impaired vision. The transit time would also deplete fuel and allow for dumping to achieve a reduced landing weight. Arriving at home base, the pilot



executed a flawless PAR approach to an approach-end engagement on the E-28 arresting gear on Runway 22. He used peripheral visual cues for runway centerline alignment to supplement the GCA commentary.

During the entire flight, the RIO continually monitored the pilot's actions. Constantly evaluating the situation, he made independent determinations of the range of likely pilot options. He had a pilot who was in severe pain, unable to see or talk, and covered with debris and blood. In this situation, LtCol Sease was forced to make immediate, life-and-death decisions based solely on his observations of pilot reactions.

The CO of VMFA-312 made some very pertinent remarks regarding this hawkstrike, and they follow:

"Given the requirement for low-level navigation training, this incident tends to fall into an 'unavoidable' category. We share the sky with birds, and there is always some risk of a strike, however slight. This story graphically illustrates the catastrophic potential of impact, with even a single bird, that any one of us may have to react to immediately, at any time, without warning. If it weren't for the disciplined composure of both aircrew members, who responded to an unexpected and unnerving emergency in a highly professional manner, this incident could easily have resulted in the loss of an aircraft. There are a number of lessons here:

- This pilot retains his sight today because his mask was on and his visor was down. Even so, impact was sufficient to force bird debris behind the visor and into the pilot's eyes, impairing his vision.

- Immediate pilot action is essential. Climb, reduce air-



speed, and assess the situation.

- Effective aircrew coordination doesn't always depend on positive ICS communication. In this case, the RIO stayed right with the situation and was ready to take whatever action necessary to assist the pilot or effect ejection if the pilot didn't respond.

- Remain calm. The calmness of both Capt Allen and LtCol Sease during a very dangerous period was instrumental in the eventual safe recovery of the aircraft.

"This aircraft was returned to service within 3 days of the incident. Its safe recovery is testimony to the crew coordination of a well-trained pilot/RIO team, and they are to be commended."

As a result of this mishap, VMFA-312 recommends that squadrons flying low-level navigation routes publish (in their briefing guides) procedures to be followed in the event of a birdstrike, to include climbing to a safe altitude, checking aircraft controllability, navigating to a suitable airfield, and landing as soon as practical.

Chances are that only a small minority of Navy or Marine Corps fliers will ever be subject to a birdstrike. But who will it be? This aircrew was prepared for what happened because they were flying by the book. The pilot was temporarily **out of sight but never out of mind**. These fliers deserve not only an extended Bravo Zulu but some consideration on your part. Would you be able to do what they did if you found yourself in a similar situation? The time to prepare is now, before you take off, because birds never seem to give sufficient warning for these impromptu midairs! ▶

A lifetime away

By LCDR Rick Purnell, USNR-R

SITUATION ONE

Two hours out of a foreign NAS in our C-2, we contacted the ship and were told the recovery was to be an hour late. Our fuel planning had not included this extensive delay, so we decided to climb and conserve fuel for Bingo options. We climbed to 27,000 feet MSL and hung the C-2 on its props. I noticed the cabin altitude was holding at 8,000 feet, which was a little high but acceptable.

After 20 minutes in holding, the following communications were exchanged between C-2 crewmembers and the ship:

(Plane Captain)

PC: Flight, Afterstation, we have a problem.

(Aircraft Commander)

AC: Go ahead.

PC: A first class got up from his seat, grabbed his chest, and fell on the floor in the aisle. Loadmaster is with him now.

AC: Smoking lamp is out. Check all cigarettes out and rig oxygen for that guy. Ask the loadmaster if he has a pulse. I'll get hold of the ship and ask for a doctor to come to the radio.

PC: Roger.

AC: I'm going down until we have 4,000 feet cabin altitude. Call the ship and get an M.D. up to Air Ops. Tell 'em we're turning inbound.

(Copilot)

CP: Roger.

CP: Echo Mike, this is COD, we have a problem.

Air Ops: COD, Echo Mike, go ahead.

CP: Echo Mike, we have a passenger on board who collapsed while complaining of chest pains. We're turning inbound and descending. Request a doctor to the radio ASAP.

Air Ops: COD, Echo Mike, Roger. We're calling a doctor now. Are you declaring an emergency?

AC: Afterstation, Flight, does that guy have a pulse?

(Loadmaster)

LM: Yes sir, and he's coming around; he's alert on the O₂.

AC: How's his chest and color?

LM: He says he feels better, color's a little white.

AC: Echo Mike, COD. Negative emergency at this time. Plan to bring me on board first and have Medical meet me. Let me talk to the doctor to see what else is required.

Air Ops: Roger COD, flight surgeon standing by.

AC: Roger, Doctor, we have a first class petty officer who stood up and then collapsed. He was holding his chest. We were at 8,000 feet cabin altitude, so we gave him oxygen and descended to a cabin altitude of 4,000 feet. He seems to be recovered now. I think it was probably hypoxia, but it could be worse.

Doctor: How old is the man, and what is his pulse rate? Also, how does his chest feel, and does he have any other pain?

AC: Wait one.

AC: Afterstation, did you catch that?

LM: Yes sir, we're checking.

PC: Sir, he's only 24 and his pulse is 92. He says he doesn't have any pain. He was trying to catch his breath and that's why he held his chest.

AC: Roger.

AC: Doc, (same message).

Doctor: Roger, sounds like hypoxia. If he develops any pain, we will reevaluate. Otherwise, leave him on oxygen. Understand you are landing first?

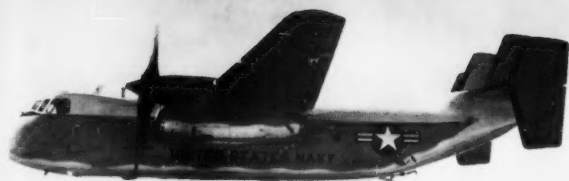
AC: That's affirm, we have asked to be first. We'll watch him.

SITUATION TWO

Twenty minutes after the catapult launch, we were leveled off at altitude and had proceeded 70 miles toward our destination NAS from out in the Atlantic. We had 130 more miles to go when the following communications were exchanged:

LM: Flight, Afterstation, we have a problem.





AC: Go ahead.

LM: We have a guy back here who won't stay awake. I don't care if he sleeps, but this guy really seems out of it.

AC: What's he doing that's strange?

LM: Well, for one thing, he slept through the cat shot. I saw his glasses and hat fly by me and I looked back. His arms and legs were out straight, but he was asleep.

AC: Why the hell didn't you tell me then?

LM: Well, he woke up and we talked to him. He seemed okay, so we figured it was nothing. Then, he started sleeping again and acting strangely.

AC: Smoking lamp's out, give him some oxygen. Find out if he feels okay and if he is taking any drugs. Look at his orders and see where he's going.

LM: Roger.

PC: Flight, Afterstation. LM's talking to the guy, and he's fairly alert. He's a MedEvac (medical evacuation) for psychiatric evaluation.

AC: What, did the ATO (Air Transfer Officer) tell you that? You mean that guy's not escorted?

PC: No sir, we didn't know, and there are no corpsmen or doctors back here.

AC: If I had known all this 20 minutes ago, we would have gone back aboard and left that one on the ship. Now, we'll get to the NAS faster. Let me know if he goes strange again!

TEN MINUTES LATER

PC: Flight, Afterstation, the guy's out again and he's still on oxygen. We can't wake him up and I can't find a pulse.

AC: Is it time to declare an emergency?

PC: We think this gent's on some kind of bad downer, and he may not make it. I want him over to Medical ASAP.

AC: Roger.

AC: Switch to 7700 and call the NAS. I'm going to push over and fly this thing as close to V_{NE} as possible from here to the beach.

CP: Roger.

CP: Approach Control, this is JM 341, I have an emergency.

CP: NAS Tower, this is JM 341.

Approach: JM 341, Approach, understand you have an emergency?

CP: Approach, 341, that's affirmative. We have a passenger who is unconscious and will not wake up. He has not suffered any physical blows, but he's not alert. Request medical assistance on the field.

Approach: Roger 341, you are radar contact 45 miles west of NAS. Plan GCA straight in to Runway 10. Cleared to descend at pilot's discretion to 1,500 feet. Say souls-on-board and fuel.

CP: 341 is passing 9,000 for 1.5. Twenty-three souls, 3 hours fuel.

FIVE MINUTES LATER

LM: Flight, the closer we get to NAS, the more awake this guy gets.

AC: You think we've been had?

LM: I think we've been had by him and the ship. But I'm still not sure of his status and I want him in medical hands.

AC: Okay, we'll press on. We've declared the emergency, and I plan to deliver him to an ambulance at the field.

When flying in the U.S., you are normally no more than 20 minutes away from a landing field where you can gain entry into the Emergency Medical System. Communications are excellent, and a flight crew can make certain that emergency medical attention will be immediately available on landing.

Flying in an overseas environment, or out at sea, is another problem. Emergency medical services may be hours away, and the crew may be the only source of aid to a victim of accident or illness. And even when medical assistance is readily available, 10 or 20 minutes is a lifetime away from helping a person who has suffered cardiac or respiratory arrest.

Both the incidents described in this article happened to me in one tour as a C-2 pilot. Although each incident turned out to be minor, the potential for serious problems existed. I am sure other crews have faced far more serious medical emergencies with no more medical expertise.

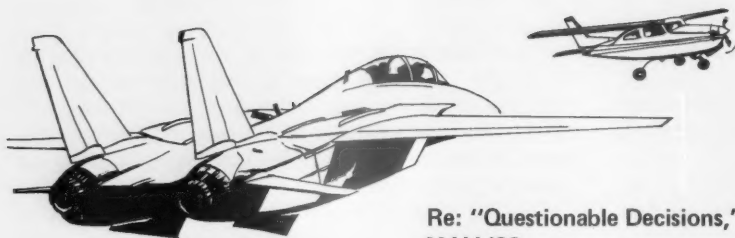
Loadmasters should receive training in first aid matters as part of their routine training and qualification. As a minimum, they should be certified in Cardiopulmonary Resuscitation (CPR) and should know the oxygen system of the aircraft well enough to determine if it can be used for emergency breathing. Loadmasters should be taught the symptoms of hypoxia, heart attack, and respiratory problems. Other members of VR crews would also benefit from such training.

At least one crewmember of multicrewed aircraft (P-3, C-130, E-2, etc.) should be qualified in such basic first aid techniques. But please, leave the pilots out of this. They'll need to concentrate on flying and communicating. If one pilot is the victim, the other is going to be very busy and he won't have the opportunity to deliver emergency medical assistance.

Obtaining such training should be a simple organizational exercise. It's available through a number of medical agencies at no cost (or a nominal cost). Navy Regional Medical Centers no doubt have in-house training capabilities as well. It's simply a matter of setting up the requirements and organizing the training. It could be well worth the effort!

The curriculum of the Naval Aircrew Candidate School in Pensacola includes training in first aid and CPR. Naval personnel should have basic first aid and CPR training to enable them to help and be helped until medical department personnel are available. We recommend a refresher course in first aid and CPR for all aircrewmembers. This certainly can be arranged through the local medical department. On a recent visit to a carrier, the medical department had set a goal of having everyone aboard CPR qualified. — Ed. ◀

LETTERS



New Blips on the Screen

San Diego, CA — Your Air Breaks article, "No Time for Traffic Calls," in the APR '82 issue was critical of a center controller for not advising an F-14 crew involved in a near-midair collision with a light aircraft of curtailment of normal traffic advisories due to a "high workload." I have news for you. Nothing in the ATC bible (FAA Handbook 7110.65C) requires a controller to do this. In fact, advising flight crews that normal traffic advisories must be curtailed due to a "high workload" could add to the workload and might not be in the best interest of flight safety. Permit me to clarify several points about traffic advisories.

If one aircraft is neither in unsafe proximity to another aircraft under control nor in such proximity that applicable separation minima will not be maintained, a controller can decide for himself whether he's able to issue traffic advisories. If feasible, he's required to do so, which I most strongly advocate, but only "to the extent possible, contingent . . . upon higher-priority duties and other factors, including limitations of radar, volume of traffic, frequency congestion, and workload." Suffice it to say that, in the instances of unsafe proximity and less-than-standard separation situations, the controller has no latitude and must report the conflicting traffic in a timely manner.

As to why the F-14 crew didn't get the word, I have no idea. Center video tapes might be able to partially recreate the story. Nevertheless, I agree with the bottom line of the article that the Mk-1 eyeball is still the best defense.

CDR T. W. McMahon
COMNAVAIRPAC Air Traffic Control
Specialist

Re: "Questionable Decisions," MAY '82

Norfolk, VA — I take it that the pilot in Mr. Eldridge's adeptly-written article is no longer in a flight status after pulling the shenanigans that he did in his TA-7C on a cross-country! It seems that no matter how many procedures and checkouts are required prior to "qualifying" fliers for the responsibilities of pilot in command, there will always be that 2 percent who try to beat the system and willfully neglect the proven rules of common sense, sound judgment, and good old solid headwork. I once knew an officer of flag rank who tried to make a three-engine takeoff in a C-54 in order to get a windmill start on the fourth engine — he wasn't as successful as the pilot of the *Corsair* — he rolled the *Skymaster* up in a flaming ball on a desert runway some 20 years ago! They never seem to learn, do they?

Keep up the informative and quality work — as usual.

Maj Joe Homer, USMC (Ret.)
Safety Specialist
Atlantic Fleet Ordnance Handling Safety
and Assistance Team
(Former naval aviator and *APPROACH*
writer)

For the Ghost of Edgar Guest

Washington, DC — In reference to your very fine MAR '82 issue, I wonder how often it is "Good Enough" to find the words that fit, then relegate the author to the vast emptiness of "Anonymous"?

The author of the poem on page 23 of that issue was Mr. Edgar A. Guest. He was a patriot, a man proud of his countrymen, and a man who deserves recognition for his fluency with words.

Maj Roger W. Page, Jr., USAF
Assistant Chief
Aerospace Physiology Office of the
Surgeon General

Look Immediately to Your Right

WHAT types of mistakes do pilots make, and how are these related to total time in model and monthly flight-hours? The answer to this question appears in this and the next two issues of *APPROACH*. This poster gives a breakdown of pilot-factor Class A flight/flight-related mishap rates for various pilot experience levels (CY 77-81). The most frequent problem areas for each level are then detailed within the rate bars.

Your mishap potential and factors to watch out for can be determined by looking at the bars pertaining to you, your lifetime hours in model, and the hours you've flown in the past 30 days.

This is fighter data. Future issues will include charts for the attack and helicopter communities. All the charts pertain only to fleet aircraft and do not include statistics for any training aircraft. The data for the broad categories (fighter, attack, and helicopter) has of necessity been lumped together, even though we realize that a single category is made up of many different aircraft with extremely specific flight characteristics and mission requirements. (This format was required from a statistical point of view due to the number of mishaps and the nature of the categorizations.)

Any questions about a particular model aircraft and its trends can be directed to the specific aircraft class desk at the Safety Center, Autovon 690-3381.

Find yourself on this chart and then tear it out and post it in a conspicuous place (readyroom, wardroom, or maintenance control). This way, we can keep pilot mishap factors, which continue to account for approximately 52 percent of all Class A mishaps, in the limelight.

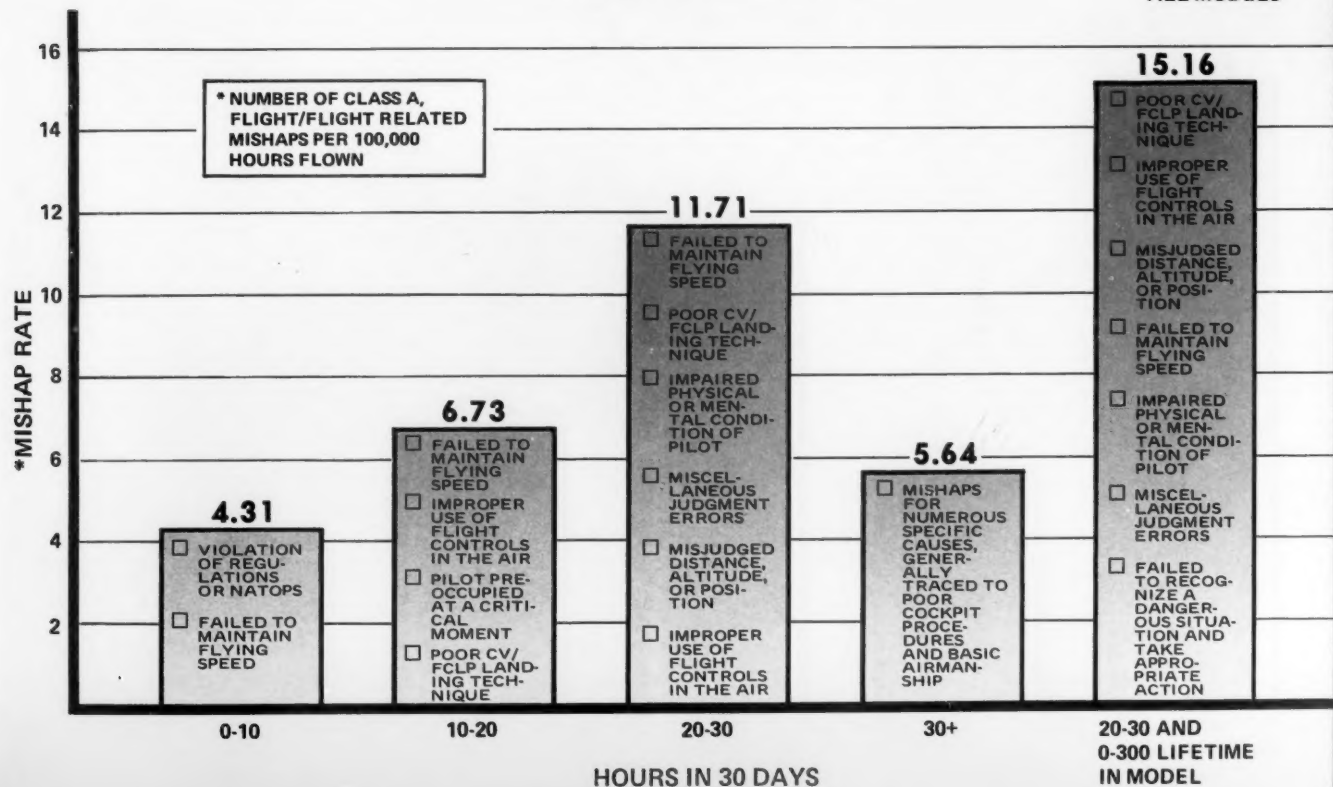
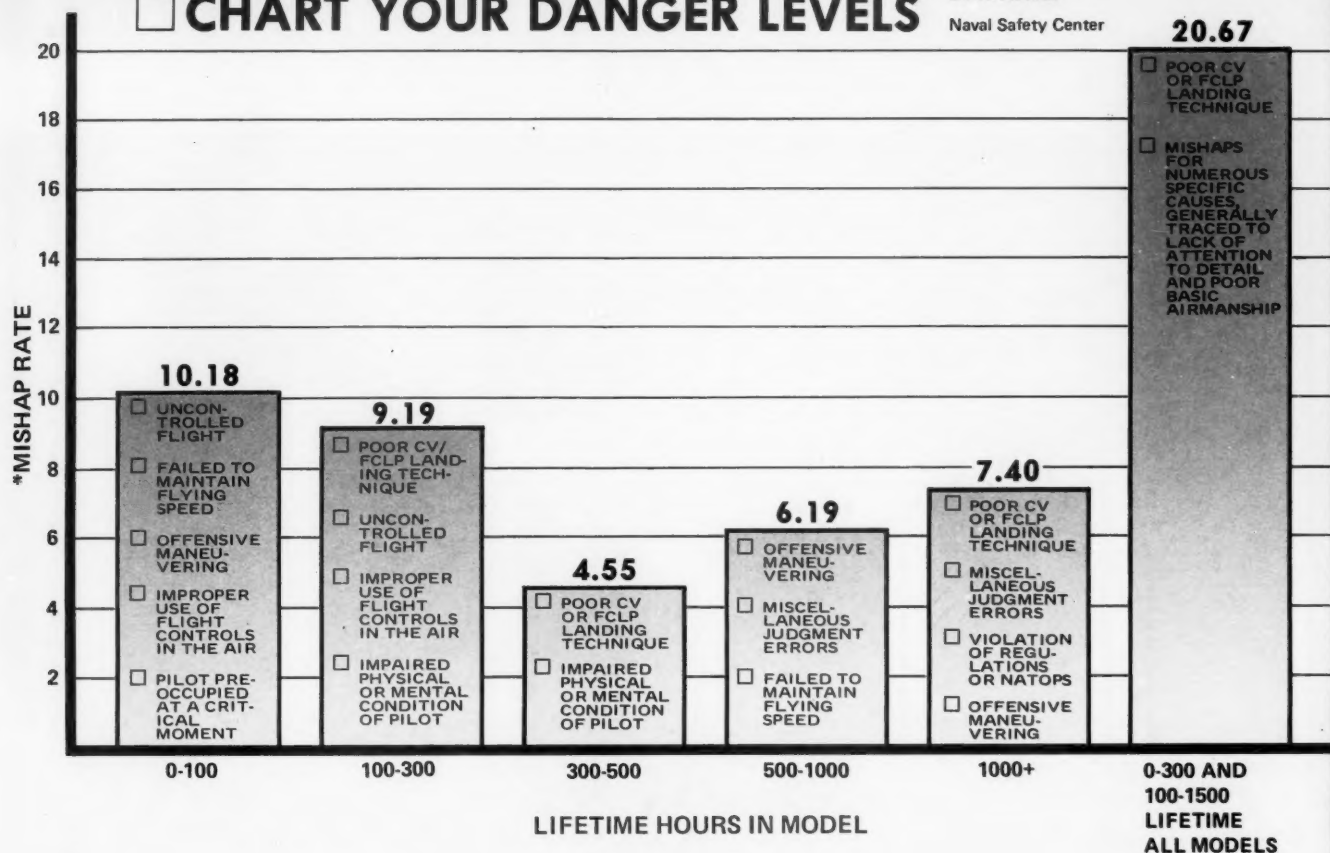
To tie it all together, an in-depth analysis relating pilot experience with mishap potential will appear in a future issue of *APPROACH*. ▶

approach/august 1982

FIGHTER PILOTS:

CHART YOUR DANGER LEVELS

Research by
Dr. M. S. Borowsky
LT R. A. Wall
Naval Safety Center



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What's *your* safety barrier?

